Creation Matters

Volume 13, Number 1 **January / February 2008**

— A publication of the Creation Research Society —

Dr. Guillermo Gonzalez – A Case of Intolerance in Science

by Jerry Bergman, Ph.D.

Dr. Guillermo Gonzalez is an assistant professor of astronomy at Iowa State University (ISU). Born in Havana, he and his family fled from Cuba to the United States in 1967, where he earned a Ph.D. in astronomy with honors from the University of Washington in 1993.

Several of his colleagues have concluded that in 2007 Gonzalez was denied tenure at ISU as a result of his support for intelligent design. Tenure denial often means the kiss of death in academia, making it very difficult to find an academic position elsewhere. Although the story was first broken publicly in the Iowa paper, *Ames Tribune*, on May 12, 2007, the actual decision took place earlier in the spring (Dillon, 2007).

Dr. Gonzalez had just bought a house, married a local woman, and wanted to start a family and continue his very promising career as an astronomer at ISU. He tends to keep to himself, focusing on his highly productive research program, which would continue if he were allowed to stay at the university. His supporters have argued that this is what ISU does not want, because of his alleged scientific heresy.

According to ISU's Department of Physics and Astronomy, the tenure process, as outlined on page 4 of its Procedures and Promotion and Tenure Policy and Procedure, requires "excellence sufficient to lead to a national or international reputation ... [that] would ordinarily be shown by the publication of approximately fifteen papers of good quality in refereed journals." Having produced 68 refereed scientific papers, Dr. Gonzalez has exceeded by more than 350 percent his own department's standard for "excellence" requirement for tenure. ISU considered 66 faculty for tenure during the past academic year, and only Gonzalez and two others were denied tenure (Dillon, 2007).

Problems Begin

In 2004, Dr. Gonzalez co-authored the book *The Privileged Planet: How Our Place in the Cosmos is Designed for Discovery*, which presents empirical evidence for the hypothesis that the universe is the product of intelligent design (Gonzalez and Richards, 2004). It was this book, and a film made from the book, that got him into trouble. The book critiques the "Copernican principle," the idea that "everything we see around us is commonplace in the universe, that we are average beings in a run-of-the-mill planetary system in an average galaxy populated by scores of other mediocrities" (Gingerich,

... continued on p. 3

God Created Earth and Heaven

(a Creation Hymn)

by Ralph Gillmann

Editor's note: Please go to page 6 for the actual hymn. I asked Mr. Gillmann for this introduction to provide insight into his writing of this song praising the God of creation.

Many hymns mention the Creator or creation but I could not find one with the creation story of Genesis. I've written poetry over the years so I decided to write such a hymn. Writing it proved to be enlightening about the nuances of Genesis — there is more subtlety there than first appears.

The hymn turned out to be long, particularly by modern standards. I started with a stanza for each day, but so much happened on the sixth day that it required two. Then I realized that, as a Christian hymn, it needed a final stanza on the new creation, which then meant a stanza on the Fall, too. I thought I was done until I realized it should have a beginning stanza to set the stage, just as the first two verses of Genesis do.

The meter is 87.87.77.88, which is not common, but is used with several Lutheran hymns. I suggest the majestic tune *Der am Kreuz*, which accompanies *On My Heart Imprint Thine Image* and is available in a Lutheran hymnal or in *The Hymn Fake Book* (chords and melody) published by Hal Leonard Corp. More common tunes that are 87.87 D such as *Harwell* may be adapted for example by repeating the last note.

... continued on p. 6

Math Matters

by

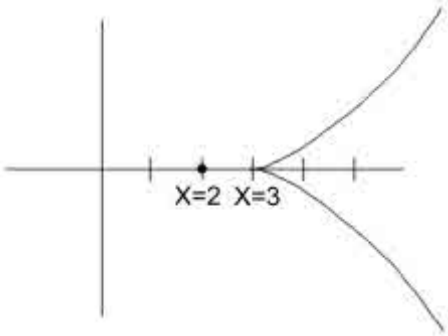
Don DeYoung, Ph.D.

How Did Charles Babbage Explain Miracles?

English mathematician Charles Babbage (1792–1871) pioneered the development of mechanical calculators. His *difference* and *analytical engines* consumed 50 years of his life. The faith of Babbage is displayed in his contributions to the *Bridgewater Treatises*. The Earl of Bridgewater funded this series of classic books in the 1830s. They were dedicated to illustrating the "power, wisdom, and goodness of God as manifested in the works of Creation."

Babbage suggested several mathematical explanations for how God performed miracles. Babbage wrote formulas for certain arithmetic sequences which change uniformly except for specific numbers which become infinitely large. Consider an example sequence where n = 0, 1, 2, …, with an infinite value for n = 5:

$$\frac{n^2}{n-5} = 0, -0.25, -1.3, -4.5, -16, \infty, 36, 24.5, \ldots$$



A graph of the function $y^2=(x-2)^2(x-3)$. The single isolated point (x = 2) on the graph was used by Charles Babbage to illustrate the occurrence of miracles.

Babbage suggested that God had carefully programmed the physical Creation with built-in *singularities*, analogous to n=5, which revealed themselves as miracles in nature.

Babbage also illustrated his ideas with graphs. The accompanying figure shows a graph of an unusual function. A smooth curve results except for the isolated point at x = 2. Babbage saw this singular point as an analogy to a miracle through master programming of nature (Eves, 1969). Babbage's technical ideas for miracles are interesting, but they are also deficient. Miracles are clearly *supernatural* and not explainable by natural laws. Miracles are exceptions to the known laws of science and math and not subject to detailed analysis.

Reference

Eves, Howard W. 1969. In *Mathematical Circles.* Prindle, Weber, and Schmidt, Inc., Boston.

Contents

Membership Matters

by Glen Wolfrom, Ph.D.

From time to time we receive letters which are an encouragement to us. Here is one we received a while back:

> Thank you so much for *Creation Matters*. You produce a unique and exceptionally interesting update on creation information. Also, please express my appreciation to all the people who work on this publication, and the authors of the papers. My thank you note is long overdue.
>
> May God richly bless and use your and your wife's creation ministry.
>
> Sincerely,
> BL
> Westfield, NJ

We are truly grateful that the Lord has provided us this opportunity to produce a publication which many people find useful. To our faithful readers, "Thank you!"

Creation Matters

ISSN 1094-6632
Volume 13, Number 1
January / February 2008

General Editor: Glen W. Wolfrom

For membership / subscription information, advertising rates, and information for authors:

Glen W. Wolfrom, Editor
P.O. Box 8263
St. Joseph, MO 64508-8263

Email: CMeditor@creationresearch.org
Phone/fax: 816.279.2312

Creation Research Society Website:
www.creationresearch.org

Articles published in *Creation Matters* represent the opinions and beliefs of the authors, and do not necessarily reflect the official position of the CRS.

Gonzalez
...continued from page 1

2006, pp. 13-14). Esteemed Harvard professor Owen Gingerich (2006, p. 16) wrote that critics of the film based on Gonzalez's book

> raised the alarm that the showing of the film *The Privileged Planet* at the Smithsonian Museum would somehow constitute an endorsement of Intelligent Design. I suppose that few of the critics actually saw the film, for it contains no explicit mention of Intelligent Design. It did, however, contain implicit criticism of the Copernican principle, for the film argued that the earth is indeed a very special place, something that we would all intuitively agree with, since it is, after all, our home. But the film carried its assertions to a cosmic level, in proclaiming how very special, how unique, in fact, our planet's location and circumstances are. The implicit message of the film was that ... *Homo sapiens* have been endowed with a highly unusual environment, not only conducive to our existence here, but also remarkably well suited as a vantage point from which to investigate the cosmos itself. Who can fail to be thrilled by the idea that we have inherited a place uniquely situated for surveying the universe?

Gonzalez is described as an easy-to-get-along-with, easygoing intellectual, who is well liked by students and faculty alike. A colleague of Dr. Gonzalez at ISU, Dr. John Hauptman (2007), wrote that Professor Gonzalez is

> very creative, intelligent and knowledgeable, highly productive scientifically and an excellent teacher. Students in my Newspaper Physics class like to interview him. I have always been fascinated by his ideas, for example, that the first few millimeters of moon dust contain pieces of ancient Earth, the circling moon acting as a vacuum cleaner scooping up impact debris, or that numerous but precise and delicate conditions allow life on our Earth. Where else is life allowed? These are great questions.

Besides being the author of nearly 70 peer-reviewed scientific papers, Gonzalez is the co-author of a major, peer-reviewed, college-level astronomy book, *Observational Astronomy*, published by Cambridge University Press, a work that is now in its second edition (Birney, Gonzalez, and Oesper, 2006). Publication of a major book has been considered by many universities to be merit for promotion to a full professor (Smith, 1973).

Gonzalez's research on stars was highlighted on the National Geographic Channel. His work has also been cited in *Science*, *Nature*, and many other leading scientific journals (for example see Murray, 1998). A citation search by the author's name located 1,638 citations in peer-reviewed science journals as of July 2007. This is an astounding number of citations for an untenured junior faculty and more than most of the faculty in his department.

A citation search by the author's name located 1,638 citations in peer-reviewed science journals as of July 2007. This is an astounding number of citations for an untenured junior faculty and more than most of the faculty in his department.

His research led to the discovery of two new planets, and he is now developing new techniques to discover even more extrasolar planets. Gonzalez also served on the NASA Astrobiology Institute Review Panel, the National Science Foundation Advanced Technologies and Instruments review panel, and as a referee for *Astronomical Journal*, *Astronomy & Astrophysics*, *Astrophysical Journal (and Letters)*, *Icarus*, *Monthly Notices of the Royal Astronomical Society*, *Nature*, *Naturwissenschaften*, *Publications of the Astronomical Society of Japan*, *Publications of the Astronomical Society of the Pacific*, *Origins of Life*, *Evolution Biospheres*, and *Science*.

His Background

In 1970 Gonzalez received his first telescope. After graduating from high school in 1983, he studied astronomy at the University of Arizona on a full-tuition scholarship. He was featured in the *Miami Herald* at age 19, as one of five South Florida finalists in the national Westinghouse science competition, for building a device that measured changes in water's conductivity as it moves from its solid to its liquid states. In 1987 he graduated from the University of Arizona with high honors, and in the same year his first refereed paper was published in *Solar Physics*. He received his Ph.D. in astronomy in 1993 from the University of Washington.

In 1995 he conducted postdoctoral research on solar eclipses at the Indian Institute of Astrophysics in Bangalore, an experience that motivated him to formulate what would later become the Privileged Planet hypothesis. He also did a postdoc at the University of Texas. The director there, David Lambert, said: "He proved himself very quickly" and was "one of the best postdocs I have had" (quoted in Brumfiel, 2007, p. 364).

In 1999 he was appointed research assistant professor at the University of Washington. I was told by one of his supportive colleagues at the University of Washington that they would not grant him tenure due to his views about intelligent design. He left the University of Washington in 2001 to become Assistant Professor of Astronomy at ISU. In 2001 Gonzalez also co-authored the cover story in *Scientific American* (Gonzalez, Brownlee, and Ward, 2001) and, in 2002, a feature story on his research was published in *Nature* (Chapman, 2002).

About this same time he began constructing his new telescope attachment to discover extrasolar planets. In 2004 a feature story on Gonzalez's research was published in *Science* (Irion, 2004). Soon after *The Privileged Planet* was published in late 2004, Dr. Gonzalez began working on a series of projects examining stars with planets to determine their properties. So far he has published twelve articles in peer-reviewed science journals on this topic alone, and continues to research new planets and planet systems.

Dr. Gonzalez's research led him and his associate researchers to discover what is known as the Galactic Habitable Zone, a term Dr. Gonzalez coined (Irion, 2004). He concluded from his research that our star, the sun, is one of the few stars in the Milky Way Galaxy capable of supporting complex life. The sun's composition and its orbit around the galactic center are both just right to sustain life. Our solar system is also far enough away from the galactic center to protect life from disruptive levels of gravitational forces and from the high levels of radiation found at the galactic core. When all of these factors exist together as a set,

they create a Galactic Habitable Zone. Dr. Gonzalez concluded that every form of life on our planet — from the simplest bacteria to the most complex animals — owes its existence to the balance of these unique conditions.

Dr. Gonzalez has also made novel contributions from his discovery that the moon functions as "Earth's lunar attic," by serving as a repository for meteorites that originally came from nearby planets. For this reason, our moon serves as a museum for our solar system's history, and he believes that its further exploration could yield much insight into our planet's own history.

Soon after the book was released, the university and the ISU Atheist and Agnostic Society cosponsored a campus forum that, in essence, attacked *The Privileged Planet*, in spite of the fact that Gonzalez's book is clearly based on science, a fact that even his critics, such as ISU professor John Patterson, acknowledged (Grundmeier, 2004). The event featured ISU religious studies professor Hector Avalos, a militant atheist and faculty advisor to the campus Atheist and Agnostic Society, who launched a campaign attacking Dr. Gonzalez's academic freedom to support intelligent design.

Although Dr. Gonzalez never introduced intelligent design into his classes, Avalos helped to spearhead a faculty petition urging all ISU faculty to "uphold the integrity of our university" by rejecting all efforts to portray intelligent design as science. Avalos later conceded to a local newspaper that the key motive for his petition was to attack Gonzalez. The petition, signed by 120 faculty, stated that claims for intelligent design

> are premised on (1) the arbitrary selection of features claimed to be engineered by a designer; (2) unverifiable conclusions about the wishes and desires of that designer; and (3) an abandonment by science of methodological naturalism. Whether one believes in a creator or not, views regarding a supernatural creator are, by their very nature, claims of religious faith, and so not within the scope or abilities of science. We, therefore, urge all faculty members to uphold the integrity of our university of 'science and technology,' convey to students and the general public the importance of methodological naturalism in science, and reject efforts to portray intelligent design as science.

It is clear from this statement that Dr. Gonzalez's beliefs were central to the antagonism that he faced.

The logical conclusion from this campaign against Dr. Gonzalez came in the spring of 2007 when ISU President Gregory Geoffroy denied Dr. Gonzalez's application for tenure. By this time Gonzalez had published almost 70 peer-reviewed scientific papers. He had also earned a research grant from the Templeton Foundation for his book, which has earned praise from eminent scientists including David Hughes, vice president of the Royal Astronomical Society, Harvard astrophysicist Owen Gingerich, and Cambridge paleobiologist Simon Conway Morris. *The Privileged Planet* was developed into a documentary and shown on PBS stations around the nation.

It is clear that Gonzalez has not only met, but has far exceeded ISU tenure requirements, and this denial is directly a result of the opposition on his campus to his support for intelligent design.

Dr. Gonzalez appealed on the basis that his beliefs, not the quality of his work, were the reason for his tenure denial (Brumfiel, 2007). The specific grounds of his appeal were that (1) he met the university's standards for receiving tenure, and (2) the university discriminated against him based upon his views about intelligent design. The university president upheld the denial, leaving Guillermo one option, to appeal to the Board of Regents, which was also unsuccessful. It is clear that Gonzalez has not only met, but has far exceeded ISU tenure requirements, and this denial is directly a result of the opposition on his campus to his support for intelligent design.

Given what can only be described as the vociferous antagonism toward intelligent design on ISU's campus, his only hope for a successful appeal is if enough people raise concerns that the denial of tenure to Gonzalez will harm the university's public reputation and thus impact fund raising. Only then will the Board of Regents be willing to go against the university faculty and render a decision based on the evidence.

The attitude expressed toward intelligent design by many ISU faculty alone documents that Gonzalez has been evaluated unfairly. Academic freedom is squarely at stake, and the eyes of the nation are on ISU to see whether it genuinely believes in academic freedom. There is also a First-Amendment, free-speech issue involved, since all of Guillermo's activities in support of intelligent design took place off campus in his capacity as a private citizen.

John G. West, associate director of the Center for Science and Culture, concluded that this case involves clear-cut "ideological discrimination," and that "the statement against intelligent design drafted at ISU played a large part in the denial of Gonzalez's tenure" (Dillon, 2007). He asked, "What happens to the lone faculty member who doesn't agree and happens to be untenured. That is practically, with a wink and a nod, a call to deny him tenure" (quoted in Dillon, 2007).

This conclusion is based on the statements of those persons who voted to deny Gonzalez tenure. One of Gonzalez's opponents at ISU, Dr. John Hauptman (2007), after first listing some of the many conditions that allow the possibility of life, admitted the reason was Guillermo's views on intelligent design:

> Why are these conditions so "perfect" for us, allowing humans to exist, and above all, to ask these questions? Intelligent design is the notion that a supreme being arranged it for us. The Greeks thought in a similar way. Grains grew, so there had to be a god Ceres who managed this. ... We are past this way of thinking about nature. ... Intelligent design is not even a theory. It has not made its first prediction, nor suffered its first test by measurement. Its proponents can call it anything they like, but it is not science. ...this tenure decision ... is purely a question of what is science and what is not, and a physics department is not obligated to support notions that do not even begin to meet scientific standards.

Another colleague of Gonzalez, Dr. Curtis Struck, a professor at ISU for 24 years, opined that he was not surprised by ISU's decision to deny tenure, adding that (quoted in Bergin, 2007): "Some of Guillermo's papers on astronomy he would be proud to have written. Some others that

is not the case ... [because he took] a coincidence too far." Specifically, the chair of the ISU Department of Physics and Astronomy, Eli Rosenberg, admitted that the book, *The Privileged Planet*, played heavily into the decision-making process.

Two of the five active tenured astronomy professors in the department are connected to a widely publicized statement that denounces intelligent design (West, 2007). The statement, created by the anti-intelligent-design National Center for Science Education, declares that "it is scientifically inappropriate and pedagogically irresponsible for creationist pseudoscience, including … 'intelligent design,' to be introduced into the science curricula of our nation's public schools" (Anonymous, 2003).

This fact is important because Dr. Gonzalez's tenure application was first rejected at the department level, and the tenured faculty members in one's academic area typically have the most weight in tenure recommendations (West, 2007). The denial of tenure to Gonzalez clearly was related to his views on intelligent design. It is critical to note that the ISU faculty handbook specifically states that the department's standards "must not impinge upon the academic freedom of the probationary faculty" (Anonymous, n.d.).

Not unexpectedly, some of Gonzalez's many supporters have feared that speaking out could hurt their own careers. One astronomer, who concluded, "It looks to me like discrimination ... They can't say that he doesn't have a decent publication record, because he absolutely does," did not want to be named, fearing that openly speaking up in favor of an "intelligent-design proponent" would damage his career (Monastersky, 2007).

The commentary about this case by others is especially revealing. *Nature* magazine's Adam Rutherford (2007) wrote, "Farewell, I hope, to the scientific career of Guillermo Gonzalez" because as a

> vocal supporter of the demonstrably unscientific guff that is intelligent design, Gonzalez displays ignorance of the scientific process, and appears to willfully defy it. And for that reason, he neither deserves the use of the facilities of a university to conduct scientific research, nor the privilege of teaching the next generation of scientists.

He adds, believing that

> 13 billion years ago ... "God made it" is not falsifiable and therefore not science. I know that, were I in a position to offer Guillermo Gonzalez tenure, I would deny it for the precise reason that his, yes, religious views about purpose in the universe explicitly mean he is a crap scientist, regardless of his ability to generate valid data.

Believing that "God made it," which is a tenet of all religions that accept the original autographs of the Old Testament as God's word, has become a justifiable reason to be terminated from a university and, unfortunately, reflects the current situation in academia.

Postscript: Since this article was written, on February 8, 2008 the Iowa Board of Regents voted 7 to 1 to uphold the tenure denial. Having exhausted the available options within the university system, his only alternative now is the courts.

References

Anonymous. n.d. *Faculty Handbook*. Office of the Executive Vice President and Provost, Iowa State University. http://www.provost.iastate.edu/faculty/handbook/faculty_handbook/

Anonymous. 2003. *Project Steve*. National Center for Science Education. http://www.ncseweb.org/resources/articles/3541_project_steve_2_16_2003.asp

Bergin, M. 2007. Publish and perish: Iowa State denies tenure to an intelligent design advocate with impeccable credentials. *World* 22(19):24.

Birney, D.S., G. Gonzalez, and D. Oesper. 2006. *Observational Astronomy*, 2nd edition. Cambridge University Press, New York.

Brumfiel, G. 2007. Darwin skeptic says views cost tenure. *Nature*, 447:364.

Chapman, C. 2002. Earth's attic. *Nature*. 419:791-794.

Dillon, W. 2007. Proponent of intelligent design denied tenure by ISU. *Ames Tribune*, May 12.

Gingerich, O. 2006. *God's Universe*. Harvard University Press, Cambridge, MA.

Gonzalez G, D. Brownlee, and P. Ward. 2001. Refuges for life in a hostile universe. *Scientific American*. 285:60–67.

Gonzalez, G. and J.W. Richards. 2004. *The Privileged Planet: How Our Place in the Cosmos is Designed for Discovery*. Regnery Publishing, Inc., Washington, D.C.

Grundmeier, L. 2004. A universal debate. *Iowa State Daily*. October 13.

Hauptman, J. 2007. Rights are intact: vote turns on question, "What is science?" *Des Moines Register*, June 2.

Irion, R. 2004. Are most life-friendly stars older than the sun? *Science* 303:27.

Monastersky, R. 2007. Intelligent design vs. tenure: was it antireligious bias when Iowa State took a pass on a scientist with controversial views? *The Chronicle* 53(39):A9.

Murray, N., B. Hansen, M. Holman, and S. Tremaine. 1998. Migrating planets. *Science* 279:69.

Rutherford, Adam. 2007. Wrong by Design. *Guardian Unlimited, Comment Is Free*, July 11. http://commentisfree.guardian.co.uk/adam_rutherford/2007/07/wrong_by_design.html

Smith, B. 1973. *The Tenure Debate*. Jossey-Bass, San Francisco.

West, J. 2007. Two astronomers at Iowa State tied to statement denouncing intelligent design as "creationist pseudoscience." *Evolution News & Views*, Discovery Institute. http://www.evolutionnews.org/2007/05/two_astronomers_at_iowa_state.html

SOS

...continued from page 11

Getting eyes back without the input of complex specified information, or getting a new TV to emerge from the snow, is a completely different claim. Creationists might ask an additional question that did not occur to these researchers. How plausible is it that useless but costly genetic information was retained for a million years, only to become fully functional again in one generation?

The only way these fish were able to see again was that the genetic information for eyes and all the brain wiring was available in the union of data sets from the two populations, and could be reconstructed by the elaborate quality control mechanisms designed into development. The 40% who could see were the lucky ones who got all the information in their zygotes.

To call this evolution, let's see them experiment with one blind population, and find out whether functioning eyesight, complete with all the brain wiring, emerges from scratch via genetic mutations alone. Darwin is good at breaking things, not designing them. Random mutation is the way an eye goes blind — and a Mercedes bends.

1. Anonymous. 2008. Progeny of blind cavefish can 'regain' their sight. *ScienceDaily* (8 January). www.sciencedaily.com/releases/2008/01/080107120911.htm
2. Borowsky, R. 2008. Restoring sight in blind cavefish. *Current Biology* 18(1): R23–R24.
3. Handwerk, B. 2008. Blind cavefish can produce sighted offspring. *National Geographic News* (8 January). http://news.nationalgeographic.com/news/2008/01/080108-cave-fish.html

...continued from page 1

God Created Earth and Heaven
(a Creation Hymn)

by Ralph Gillmann

God created earth and heaven
To begin all history.
Angels shouted out with joy when
He laid out the world to be.
Dark and shapeless came the earth,
Wet and moving toward its birth.
God's own Spirit softly hovered
Over waters as they quivered.

Piercing through the silent blackness,
God exclaimed, Let there be light!
He divided light from darkness,
Called light Day and darkness Night.
God saw that the light was good;
Solely on His Word it stood.
Evening shadows in rotation
Gave to morning day's duration.

On the next day of creation
Waters swelled in full supply.
God said, Let there be expansion
Separating low from high.
Call it Heaven on display;
It was so the second day.
Evening shadows in rotation
Gave to morning day's duration.

On the third day of creation
God said, Let the waters flow
Into Seas and call the region
Earth appearing from below.
Grass and herbs and fruit trees grew;
God declared their mass debut.
Evening shadows in rotation
Gave to morning day's duration.

On the fourth day of creation
God said, Let there be two lights,
One to rule each day in motion,
One less bright to rule the nights.
God created stars besides,
And the planets to be guides.
Evening shadows in rotation
Gave to morning day's duration.

On the fifth day of creation
God said, Waters bring forth life,
Birds and fish and great cetaceans,
All their kinds and free of strife.
God declared their blessed state
To abound and procreate.
Evening shadows in rotation
Gave to morning day's duration.

On the sixth day of creation
God said, Bring forth from the Earth
Cattle, creeping things in action,
Beasts, and all their kinds to birth.
Lastly God said, Let us make
In our image man awake.
Let them have dominion regal
Over all from ant to eagle.

God created the first couple,
Told them multiply and fill
All the Earth, subdue and sample
Herbs and fruit on field and hill.
Creeping thing and bird and beast:
All were given herbs to feast.
Evening shadows in rotation
Gave to morning day's duration.

Earth and Heaven were completed;
God ceased work and took a rest.
So the seventh day was hallowed;
The Creator called it blest.
Every facet God surveyed:
Very good was all He made.
Evening shadows in rotation
Gave to morning day's duration.

God gave man and woman freedom
But with one condition made.
They took outlawed fruit and ate some,
Hid themselves, and were afraid.
God provided clothes of skin
For their labor under sin.
Shadows grew in each direction
Through the night of lost reflection.

On the day of new creation
God's own Son arose from death.
He fulfilled mankind's devotion,
Sacrificed with His last breath.
Trust in Him for life renewed
By His blood and body food.
Day eternal brings salvation,
Light seen now by revelation!

The author may be reached at:
rg@rigadoon.org

The pre-Flood/Flood Boundary: Not in the Grand Canyon!

Froede and Oard (2007), in their recent article *Defining the Pre-Flood/Flood Boundary within the Grand Canyon…*, use the Austin and Wise (1994) five "diagnostic criteria" to propose a pre-Flood/Flood boundary in the Grand Canyon, at the "Greatest Unconformity" at the base of the Bass Limestone, just above what they call the "igneous/metamorphic basement." Additionally, they describe my contention (Hunter, 1992) that the pre-Flood/Flood boundary might not be exposed in the visible geological record, but located below the Earth's crust in the mantle, as "such a dramatic proposal."

The authors' description of my Flood model as "such a dramatic proposal" is, in my view, surprising given their description of the Flood event, in the same article, as not merely "dramatic" but "so dramatic that it can hardly be imagined." Surely, if the authors' description of the Flood is correct, as I believe it is, then the real model of the Flood, when finally deciphered, might also be "so dramatic that it can hardly be imagined."

Subsequent to my 1992 paper (Hunter, 1992) regarding the Archean, referred to by the authors, I have developed the gravitational decompression model of the Flood, proposing that the Flood was initiated by a sudden decompression of the Earth, due to a temporary reduction of gravitational force facilitated by a temporary increase, by God, of the value of the distance parameter in Newton's Inverse Square Law, which resulted in decompression melting and differentiation of the Earth's mantle, and extrusion of the Archean dominantly volcanic sequences (Hunter, 1996, 2000, 2004). The pre-Flood/Flood boundary is considered to occur at the 660 km discontinuity in the Earth's mantle, where this differentiation is first apparent in the Earth's density profile.

Such a model might seem "so dramatic that it can hardly be imagined" and may change some perceptions of the magnitude of the hydrological and geological processes which occurred during the Flood.

Oard (2007) describes Froede's (1995) "biblical geological model for the Flood" as being based on: "reasonable deductions of what is expected in a global Flood." Presumably the authors believe that Austin and Wise's five "discontinuity criteria" for identifying the pre-Flood/Flood boundary are similarly based on "reasonable deductions of what is expected in a global Flood."

Care should be taken in making "reasonable deductions" about an event described as "so dramatic that it can hardly be imagined." The development and application of ad hoc "reasonable deductions" (Oard, 2007) and "discontinuity criteria" (Austin and Wise, 1994; Van Wingerden, 2003) for the pre-Flood/Flood boundary, though seemingly reasonable and logical, have tended to preclude consideration of additional, probably supereminent, geological processes which may have dominated the initiation and development of the Flood and the formation of a pre-Flood/Flood boundary, and which are only evident in a global view of the Precambrian.

For instance, regarding Austin and Wise's "palaeontological discontinuity," the authors state that "The pre-Flood rock record is viewed as containing little by way of fossilized organic materials. Flood deposits would contain an abundance of fossilized life remains" (Froede and Oard, 2007).

This can only be valid if 1) there was pre-Flood deposition of strata, with preservation of fossils, 2) these strata are preserved in the presently observable geological record, and 3) there are no valid alternate explanations for a lack or paucity of fossils in the earliest Flood strata. The authors provide no evidence for either 1) or 2), and I and others have provided valid explanations for 3) (Hunter, 1992, 1996, 2004; Hedtke, 1971).

In my opinion the authors do seriously err in developing and applying ad hoc criteria to characterise the pre-Flood/Flood boundary from observations of extremely limited exposures of the global geological record in the Grand Canyon, where such exposure, particularly of the Precambrian, is in no way representative of the stratigraphy, aerial distribution, or character of the global geological record.

Figure 1 gives a global stratigraphic context of Precambrian Proterozoic and underlying Archean strata.

The authors place the pre-Flood/Flood boundary at the base of the Grand Canyon Supergroup, which is at or near the base of

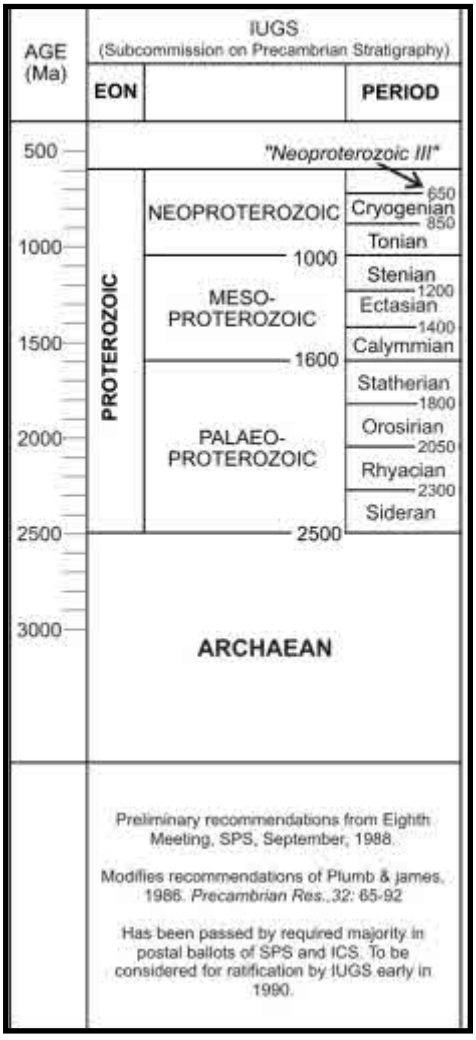


Figure 1. Selected Precambrian Subdivisions (after Plumb, 1990; reproduced by permission).

the Neoproterozoic (Salop, 1982), thereby implying that some 26% of the geologic record was deposited prior to the Flood.

Cas and Wright (1987) give insight into the geological environment in which the Precambrian strata were deposited, asking "How different were physical processes in the Precambrian from those operating during the Phanerozoic," and note:

> The geothermal gradient may have been different and the tectonic regime was also almost certainly different. Nevertheless, the basic physical principles…should be as applicable to Precambrian volcanic successions as they are to more recent volcanics. Lavas of all types (basaltic, andesitic and rhyolitic) in all physical forms (pillowed, massive and dome-like) have been described

in Precambrian successions. It is clear that the physical volcanic processes were therefore similar to those operating in modern volcanic settings…

The Archean contains volcanic sequences up to 20 km thick (Hunter, 1996), not the ideal environment for preservation of fossils, nor what one would expect during Creation Week or the "antediluvian" period, but certainly supportive of Tyler's suggestion that "The time is right … for the emergence of new explanatory models of the basement rocks" (Tyler, 2005, p.128).

M. J. Hunter
24 Prior St.
CHARTERS TOWERS
Queensland, Australia 4820
mjohnhunter@bigpond.com

References

CRSQ = Creation Research Society Quarterly

Austin, S.A. and K.P. Wise. 1994. The pre-Flood/Flood boundary: as defined in Grand Canyon, Arizona and eastern Mojave Desert, California. In: Walsh, R.E. (Ed.) *Proceedings of the Third International Conference on Creationism.* Technical Symposium Sessions. Creation Science Fellowship, Pittsburgh, PA, pp.37–47.

Cas, R.A.F. and J.V. Wright. 1987. *Volcanic Successions, Modern and Ancient: A Geological Approach to Processes, Products and Successions*. Allen & Unwin, London.

Froede, C.R., Jr. and M.J. Oard. 2007. Defining the pre-Flood/Flood boundary within the Grand Canyon: were all the pre-Flood sediments scoured down to basement during the Flood? *Creation Matters* 12(4):2–3, 6.

Froede, C.R., Jr. 1995. A proposal for a creationist geological timescale. *CRSQ* 32(2):90–95.

Hedtke, R. 1971. A geo-ecological explanation of the fossil record based upon divine creation. *CRSQ* 7(4):214–221.

Hunter, M.J. 1992. Archean rock strata: Flood deposits — the first forty days. In: *Proceedings of the 1992 Twin-Cities Creation Conference.* Twin-Cities Creation Science Association, Northwestern College, Genesis Institute. Roseville, MN, pp. 153–161.

Hunter, M.J. 1996. Is the pre-Flood/Flood boundary in the earth's mantle? *CEN Technical Journal* 10(3):344–357.

Hunter, M.J. 2000. The pre-Flood/Flood boundary at the base of the earth's transition zone.

CEN Technical Journal 14(1):60–74.

Hunter, M.J. 2004. Is there a Genesis Flood heat dissipation problem? *CRSQ* 40(4):221–225.

Oard, M.J. 2007. Defining the Flood/post-Flood boundary in sedimentary rocks. *Journal of Creation* 21(1):98–110.

Plumb, K.A. 1990. Subdivision and correlation of the Australian Precambrian. In: Hughes, S. D. (Editor) *Geology and Mineral Deposits of Australia and Papua New Guinea.* Vol. 2. The Australian Institute of Mining and Metallurgy.

Salop, L.I., 1982. *Geological Evolution of the Earth During the Precambrian.* Springer-Verlag, Berlin Heidelberg.

Tyler, D.J. 2005. Revisiting Precambrian geology. *CRSQ* 42(2):127–128.

Van Wingerden, C. 2003. Initial Flood deposits of the western American Cordillera: California, Utah and Idaho. In: Ivey, R.L. (Ed.) *Proceedings of the Fifth International Conference on Creationism*: Technical Symposium Sessions. Creation Science Fellowship, Pittsburgh, PA, pp.349–358.

A Reply to M. J. Hunter

In a recent article (Froede and Oard, 2007), we proposed that all of the sedimentary/metasedimentary strata seen in the Grand Canyon, including some of the crosscutting igneous basement strata, were probably formed during the Flood. As such, the pre-Flood/Flood boundary in the Grand Canyon would occur along the Greatest Unconformity and could include some of the injected crosscutting basement rocks (e.g., Zoroaster Granite). While not completely in agreement with the discontinuity criteria as proposed by Austin/Wise (1994) for defining the pre-Flood/Flood boundary, we included them to draw what we believe are reasonable conclusions. Obviously, what may seem reasonable to some is unacceptable to others.

In his reply, Mr. Hunter (2008) challenges several of our ideas and believes that our conclusions are unreasonable. We will broadly address his issues, as space does not allow for a detailed response.

1) Hunter wastes space playing with words. Yes, the Flood was a singular geologic event beyond the experience of modern science. Yet biblical truth and geological observation allow forensic investigation and reasonable deduction. We never claim scientific certainty for our proposal, simply that it is historically reasonable given the biblical and geological data. When all is said and done, Hunter's (2008) only objection to our proposal is that it does not coincide with his own model. However, we are comfortable with the existence of multiple working hypotheses, and encourage him to develop his theory. Nothing in Hunter's reply directly counters what we have proposed. Rather, he focuses on our selection of words and the lack of specificity regarding the geologic energy released during the Flood. Therefore, we cannot defend our proposal beyond what we already presented.

2) Hunter believes that a miraculous gravitational decompression of the Earth initiated magmatic flow within the mantle. This ultimately resulted in the extrusion of tremendous volumes of Precambrian volcanic rock across the surface of the planet. He thus places the pre-Flood/Flood boundary at the 660 km discontinuity in the mantle (Hunter 2000). This is a very complex solution; the question should not be "is it possible?" but "is it necessary?" Like Catastrophic Plate Tectonics, Hunter's model raises more problems than it solves. Where are the Precambrian strata in the oceanic basins? Why did this decompression event only generate Precambrian volcanic strata across the continents? What happened to the hydrosphere, atmosphere, and life aboard the Ark when Earth's upper mantle and overlying crust melted? Why is this complicated solution necessary, when simpler models suffice to explain the biblical and geological data?

3) Why does Hunter suggest such a model in defense of the Flood? One obvious reason is that he accepts as a basic assumption the global evolutionary geologic column (with a compressed timeframe) as a true model of the arrangement of crustal rocks. From this perspective, Hunter defines all "Precambrian" basement rock beneath the Greatest Unconformity in the Grand Canyon as being necessarily post-Flood. But what is the scientific or philosophical basis for the classification and global correlation of all of this igneous and metamorphic "Precambrian" rock? Unlike sedimentary strata, there are no lithological or biostratigraphic criteria that can be applied either locally or globally.

The answer is based on the pronouncements from the International Commission on Stratigraphy (ICS). This group of geologists has simply picked geochronologic boundaries that can be compared to radiometric dates, and they defined the various Precambrian eras, such as "Archean" by these *arbitrary* numbers. In other words, the Archean is nothing more than any radiometrically dated rock defined between 2,500 Ma and 3,800 Ma (see Gradstein et al., 2004).

Does Hunter accept the validity of radiometric dating? Does he accept the imprimatur of the ICS? If not, then he has no logical basis to even *define* the "Archean" much less build a model of biblical history on its existence. All of the purported underlying Precambrian strata (both igneous and metamorphic) shown in his chart are merely a composite of many geologic sections of basement rocks held together by the glue of their purported radiometric age — an age not accepted by any young-earth creationist — derived from a methodology likewise

unacceptable.

We believe that creationists should adopt a more empirical approach to stratigraphy (even "Precambrian" stratigraphy) and ignore the dictates of geologists who advocate a system built on uniformitarianism, even if that system rejects deep time, and evolutionary assumptions. Defining the rock record at specific locations (as proposed in our original article) avoids this trap.

Despite all the protests about our defining the pre-Flood/Flood boundary at the Greatest Unconformity in the Grand Canyon, Hunter offers nothing of real substance to back his claim that we are incorrect. Perhaps other criteria can be identified in the future — beyond those five identified by Austin and Wise (1994) — that might move the boundary lower than the exposed geological section in the Grand Canyon. But presently, no means exist to draw a definitive contact in the Earth's interior with anything other than the pen of speculation.

References

Austin, S.A. and K.P. Wise. 1994. The pre-Flood/Flood boundary: As defined in Grand Canyon, Arizona and eastern Mojave Desert, California. In Walsh, R.E. (Editor). *Proceedings of the Third International Conference on Creationism* (technical symposium sessions), pp. 37–47. Creation Science Fellowship, Pittsburgh, PA.

Froede, C.R., Jr. and M.J. Oard. 2007. Defining the pre-Flood/Flood boundary within the Grand Canyon: Were all the pre-Flood sediments scoured down to basement during the Flood? *Creation Matters* 12(4):3–4, 6.

Gradstein, F.M., J.G. Ogg, and A.G. Smith. 2004. *A geologic time scale 2004*. Cambridge University Press, New York, NY.

Hunter, M.J. 2008. The pre-Flood/Flood boundary: Not in the Grand Canyon! *Creation Matters* 13(1):7–8.

Carl R. Froede Jr., P.G.
Michael J. Oard, M.S.

Speaking of Science

Editor's note: All S.O.S. (Speaking of Science) items in this issue are kindly provided by David Coppedge. Opinions expressed herein are his own. Additional commentaries and reviews of news items by David, complete with hyperlinks to cited references, can be seen at: www.creationsafaris.com/crevnews.htm. Unless otherwise noted, emphasis is added in all quotes.

Hidden Messages Found in DNA

DNA contains the language of life, but what would happen if someone found hidden messages in the genetic code? Such a thing actually happened, reported *The New York Times*.[1] When Craig Venter's lab produced an artificial organism, they inserted hidden "watermarks" into the genome: his name, the names of co-workers, and the name of the Venter Institute.

Wired Science took up the puzzle and found the hidden messages.[2] The sequences of DNA translated into the letters for amino acids, which in turn spelled out English words.

This was not the first genetic puzzle to be coded and deciphered. The New York Times article said that in 2003, a German biotech company inserted a line from Virgil into the DNA for a laboratory plant.

No doubt Venter would be quite upset if children were taught in school that these messages evolved by random mutation and natural selection over millions of years.

1. Pollack, A. 2008. Synthetic genome: Signed, sealed, decoded. *The New York Times* (29 January). www.nytimes.com/2008/01/29/science/29genome.html
2. Madrigal, A. 2008. Wired Science reveals secret codes in Craig Venter's artificial genome. *Wired Science* (28 January). http://blog.wired.com/wiredscience/2008/01/venter-institut.html

A Step Closer to Gecko Adhesive

Scientists are getting closer to imitating the amazing wall-climbing ability of geckos (see also O'Quinn, 2006[1]). *ScienceDaily* reports that a team from UC Berkeley manufactured tape with hard polymer fibers just 600 nanometers across that mimic the spatulae on gecko feet.[2]

This latest attempt at imitating the gecko works only on smooth, clean surfaces, but requires no pressure and resists sliding. It lifts off easily and leaves no residue. Both gecko feet and the new tape work by employing intermolecular forces called van der Waals forces that only become significant at close range. The tiny fibers create a large surface area for these forces to act on.

Next, the team wants to improve it so that it can work on rough or dirty surfaces and clean itself. Geckos are still way out in front in this technology. Their spatulae, being much smaller (200 nanometers in diameter), resist contamination because large dirt particles are more likely to stick to the surface than to the foot.

It was only after 2000 that scientists began to understand the physics of gecko feet. Immediately, they set out to imitate them. Products inspired by this technology will soon find wide application. Science inspired by nature's designs — biomimetics — is on the forefront of research that, unlike evolutionary theory, is poised to improve our daily lives.

1. O'Quinn, J.C. 2006. Defying gravity. *Creation Matters* 11(4):12.
2. Anonymous. 2008. Climbing the walls? New adhesive mimics gecko toe hairs. *ScienceDaily* (30 January). www.sciencedaily.com/releases/2008/01/080129201546.htm

Of All the Nerve: Functional Intron Discovered

An intron vital to the production of nerve cells has been discovered, reported *ScienceDaily*.[1] It acts as a "gatekeeper" to guide the messenger RNA for local control of gene expression in dendrites, the spindly arms of neurons. The discovery was made by a research team at University of Pennsylvania School of Medicine. According to the article,

> The group surmises that the **intron** may **control** how many mRNAs are brought to the dendrite and **translated** into functional channel proteins. The **correct number of channels** is **just as important for electrical impulses** as **having a properly formed channel.**

Introns had long been assumed to be junk that the spliceosome cuts out of a transcribed messenger RNA. The team found that knocking out the intron in this case, however, produced abnormal electrical properties in the nerve cells. "This is the first evidence that an intron-containing RNA outside of the nucleus serves **a critical cellular function**," said James Eberwine, senior author.

Eberwine also added this comment: "Just because the intron is not in the final channel protein doesn't mean that it doesn't have **an important purpose**." In fact, the article says, they may have hit on a general mechanism for the regulation of RNAs.

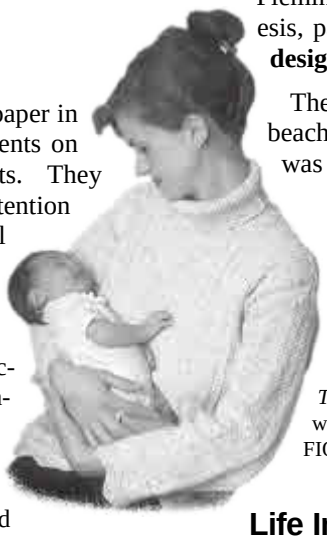
The treasures being found in "junk DNA" are good for business. A company named Rosetta Genomics is hoping to cash in on the new discoveries to be made about micro-RNAs (miRNA).[2] Noting the steep rise in articles about treasure in junk DNA, reporter Ohad Hammer said, "Rosetta Genomics' impressive pipeline, unparalleled discovery capabilities and intellectual property make it one of the most exciting biotech companies out there."

Those interested in more technical detail about introns and alternative splicing may find revealing new ideas about intron function in a paper published by a team of European scientists in *Nature* last month.[3] The abstract says, for example, "In multicellular eukaryotes, long introns are recognized through exon definition and most genes produce multiple mRNA variants through alternative splicing."

They also serve who only stand and wait — John Milton. These introns should not have been assumed to be junk, even if all they did was stand and wait. Apparently they are doing much more than that.

1. Anonymous. 2008. Some 'junk' DNA is important guide for nerve-cell channel production. *ScienceDaily* (5 February). www.sciencedaily.com/releases/2008/02/080205115800.htm
2. Hammer, O. 2008. Rosetta Genomics: Mining genes from junk (Part I). *Seeking Alpha*$^{\alpha}$ (28 January). http://seekingalpha.com/article/61724-rosetta-genomics-mining-genes-from-junk-part-i
3. Jaillon, O. *et al*. 2008. Translational control of intron splicing in eukaryotes," *Nature* 451:359–362. doi:10.1038/nature06495. www.nature.com/nature/journal/v451/n7176/full/nature06495.html

The Evolutionary Inference



This Darwinian Just-So Story comes from a paper in *PNAS*.[1] Three Italian scientists did experiments on the perception of two-day old human infants. They found that the babies tended to pay more attention to biological motion than to non-biological motion, and they looked longer at right-side-up displays than at upside-down ones. Their conclusion:

> These data support the hypothesis that detection of biological motion is an intrinsic capacity of the visual system, **which is presumably part of an evolutionarily ancient and nonspecies-specific system** predisposing animals to preferentially attend to other animals.

Previously, the inborn disposition to watch biological motion had only been demonstrated in one other animal: the chicken.

Observation: babies prefer looking at biological motion. Conclusion: Once upon a time, in an ancient swamp, an animal emerged that could not survive unless it followed its mother. Over millions and millions of years, these became chickens and babies. Isn't science wonderful?

If the publishers of science fiction or children's books reject your manuscript, the elite intellectuals at the National Academy will welcome you with open arms, and the NCSE will bless you for adding to the mountains of evidence for evolution with which to bury the creationists.

1. Simion, F., L. Regolin, and H. Bulf. 2008. A predisposition for biological motion in the newborn baby. *Proceedings of the National Academy of Sciences*, USA, published online before print (3 January). 10.1073/pnas.0707021105. www.pnas.org/cgi/content/abstract/0707021105v1

Nuke Sand, Get Life

Glowing sand was your cradle, claimed *The Telegraph*.[1]

> The sifting and collection of **radioactive material** by powerful **tides** could have generated the **complex molecules that led to the evolution of carbon-based life** forms — including plants, animals and **humans**.

The article acknowledged that "radiation may seem an unlikely candidate to **kick-start life** because it breaks chemical bonds and splits large molecules," but it was thought that some of the energy could be used productively. Radioactive grains in the sand could provide the chemical energy to build sugars, amino acids, and soluble phosphates needed for life as we know it.

This scenario is the brainchild of Zachary Adam, an astrobiologist at the University of Washington. His idea can "be added to **the existing long and varied list of hypotheses.**" Reporter Nic Fleming listed the usual suspects: Oparin, Miller, the clay hypothesis, panspermia, "and the **intervention** of a divine, **intelligent designer.**"

The article is accompanied by a picture of humans at the beach. No claim was made whether the energy from sunlight was helping them evolve.

Somebody else needs a kick-start. At least intelligent design wasn't excluded from the list of possibilities this time. It's the only contender that isn't deaf, dumb, blind, and lazy from the starting gate. (*Clarification*: speaking of the hypotheses, not their proponents).

1. Fleming, N. 2008. Life on Earth 'began on a radioactive beach.' *Telegraph.co.uk* (9 January). www.telegraph.co.uk/earth/main.jhtml;jsessionid=K1VHPR2AH3GWTQFIQMFSFF4AVCBQ0IV0?xml=/earth/2008/01/09/scibeach109.xml

Life Influences Dating Method

The rate of calcium carbonate precipitation can double if microbes are present, says an article in *PhysOrg*.[1] Scientists studying hot spring deposits in Yellowstone made this "surprising discovery about the geological record of life and the environment." The article adds, "Their discovery could affect **how certain se-**

quences of sedimentary rock are dated, and how scientists might search for evidence of life on other planets."

The travertine terraces at Mammoth Hot Springs in Yellowstone can grow millimeters per day. The precipitation can actually "more than double" when microbes are present, the article said. Calcium carbonate is the most abundant mineral in the rock record.

The scientists believe that inferences about the presence of life can be drawn from studying the rate of deposition. "Separating biologically precipitated calcium carbonate from non-biologically precipitated calcium carbonate is difficult," however. Inferences about life would also require independent knowledge about the rate of deposition. They believe they can tease this information out from the chemistry, based on "the environmental and ecological context of the rock being studied."

The important observation here is that previously trusted assumptions about most common sedimentary rock were off by more than a factor of two. What other assumptions are still unquestioned that will be overturned in the future? Other questions: What will this do to cave formation dating methods? Will they change the textbooks within the next decade? How can they rightfully infer the presence of life from a precipitation rate on a planet where no life has been found, when other unknown factors could influence the rate? How come geologists never apologize for the misinformation they spread?

1. Anonymous. 2008. Hot springs microbes hold key to dating sedimentary rocks, researchers say. *PhysOrg.com* (22 January). www.physorg.com/news120228971.html

Mouse Grows Long Finger, Ready To Take Off Like a Bat

When does humor in a scientific journal cross the line of scientific objectivity? You be the judge. *Science* magazine, in its "Random Samples" news featurette, said this in the Jan. 18 issue:[1]

> **Over the past 100 million years** or so, **bats have evolved** many features that distinguish them from their mammalian cousins. One is **long, bony digits** to support their wings. Now, by **manipulating one small DNA sequence**, Richard Behringer of the University of Texas M. D. Anderson Cancer Center in Houston and colleagues have **nudged** mice a **tiny step along the evolutionary path to bat-hood.**
>
> The researchers looked at the expression of a homeobox gene, *prx1*, a **key** to the **development** of limbs in all mammals, and found that bats expressed the gene differently from mice in embryonic limbs. So, in mice they removed a chunk of DNA known to control *prx1* expression and replaced it with the same piece from bats. The forelimbs of the resulting mice were **6% longer** than those of normal baby mice. **Although small**, that increase is **"important,"** says developmental biologist Clifford Tabin of Harvard Medical School in Boston.
>
> Similar studies have been done with flies and worms, but this is the first to show how a **specific change in control of gene expression** — and not an actual gene — can **produce** a **gross morphological change** in a mammal, says Behringer, whose study was published this week in *Genes & Development.* **"If you play this through with lots and lots of genes, maybe ultimately we could make that mouse fly out of the cage."**

Bats, of course, have sophisticated flying skills, membranes for lift, specialized ears and mouth parts for sonar (with a brain to use them), special feet for clinging to cave roofs, dietary adaptations, and "many features that distinguish them from their mammalian cousins." The earliest known fossil bats already had these adaptations, and their evolutionary history is "largely unknown" and their fossil record "impoverished." It would seem that much more than adding a millimeter or so to the forelimbs would be necessary before the mouse could "fly out of the cage."

OK, so the cute extrapolation was meant to be a little extreme for humor. We try to have fun in our reporting, too. What's not funny is that in reality, they are dead serious. They really believe a 6% change in a finger length is actually a "step along the evolutionary path to bat-hood." Give it 100 million years and these small changes can add up to major transformations. And you thought orthogenesis went out in the 1920s.

1. Holden, C. (editor). 2008. (Random Samples) Mice: Ready for takeoff. *Science* 319(5861):263.

Blind Cave Fish Can See Again

Can blind cave fish get their lost eyes back? Yes, if they hybridize with other cave fish that lost them due to different mutations. An article on *ScienceDaily* described experiments at New York University that showed that the progeny of two independent cave populations could have fully functioning eyes.[1] Why? Because "the **genetic deficiencies** in one lineage are **compensated** for by **strengths** in the other, and vice-versa."

Nearly 40 percent of the progeny from their crossing experiments could see again, even though the scientists believe the fish populations had independently lost their vision a million years ago. Getting back functioning eyesight means that not only the eyeballs came back, but "all the connections to the brain for **proper processing of information** not used for **that enormous length of time** are **restored.**"

Professor Richard Borowsky at NYU, who published his research in *Current Biology*,[2] attributed this to evolution. "**Evolution** has **many ways to accomplish** the same end result, which in the case of cave fish is **blindness**." Yet loss of function is not the same as gaining functional eyes in the first place. The loss of sight was apparently due to non-overlapping mutations in the two populations. The same was true for loss of pigment. *National Geographic*'s report on the regeneration of sight in blind cave fish began, "It's a miracle!" Borowsky calmly stated, "Evolution's palette is varied."[3]

There are a hundred ways to break a car, but only one way to build it: intelligent design. Attributing blindness to evolution is like attributing a car crash to Ford. (On second thought, maybe we had better say BMW.)

Getting a broken car back into working condition by blending parts from two broken cars also takes intelligent design. The Creator put built-in redundancy into pairs of chromosomes, and scattered the functionality across genes to reduce the probability of a single point of failure. In the cave environment, the usefulness of eyes and pigment was lost. This suggests that functioning organs involve a cost that is burdensome when the benefit is gone.

Natural selection can jettison useless baggage. That premise is not controversial even among staunch creationists. A television set is a nice benefit unless you are a hiker trying to carry one through a snowstorm.

... continued on p. 5

Worldview Affects Scientific Interpretation:

SAME DATA, DIFFERENT CONCLUSION

April 11–13, 2008

Grace Bible Church, 3625 S. 19th Ave., Bozeman, Montana

Dr. Danny Faulkner	*The Christian Origin & Basis of Science* *Design in Astronomy* *Age in Astronomy* *Big Bang or Big God?*	Dr. Kevin Anderson	*The Conflict Between Evolution and the Science of Genetics* *A Creationist Perspective of the Human Genome* *Humans are Not Evolved Animals*
Mike Oard, M.S.	*The Ice Age: An Example of Creation Research* *Is Man the Cause of Global Warming?*	Dr. Gale Heide	*Worldviews and Scientific Inquiry*
			AND MUCH, MUCH MORE!

Cost: FREE **Phone:** 406-587-0455 **More info:** www.creationsciencedefense.com
Contact: Esther Fishbaugh **Email:** gethelp@creationsciencedefense.com

Creation Research Society
P.O. Box 8263
St. Joseph, MO 64508-8263
USA

Address Service Requested

Nonprofit Org.
US Postage
PAID
Creation Research Society

Creation Matters

January / February 2008
Vol. 13 No. 1

All by Design

by Jonathan C. O'Quinn, D.P.M., M.S.

Chemical Signaling in the Honeybee

Honeybees are social insects that live in highly organized colonies. Many people are familiar with the "wiggle dances" that foraging honeybees use to communicate the location of food sources to their sister bees, but these animals also use a highly sophisticated array of nearly 50 chemical pheromone signals to orchestrate every detail of day-to-day life.

Isopentyl acetate in alarm pheromone, for example, is one of about 25 different molecules released from a honeybee worker's sting gland during stinging that arouse the colony in response to any perceived threat. Nasanov pheromone is a seven-component blend of chemicals released by worker honeybees to elicit non-aggressive swarming. The queen produces a nine-component cocktail of pheromones that, when blended together, act synergistically to attract worker bees to specially care for her. Should the queen die, several hours' absence of this chemical signal induces workers to choose several freshly laid eggs to raise into new queens. Long-term absence of this signal induces some workers to develop ovaries.

Honey bee, *Apis mellifera* Linnaeus - Adult(s)
Image citation: David Cappaert, Michigan State Univ.
Image number: UGA5255020, http://Bugwood.org

Honeybee larvae produce a ten-component pheromone blend of ethyl and methyl esters of palmitic, linoleic, linolenic, stearic, and oleic acids. Together, they signal worker honeybees to cap their brood cells prior to pupation. Differences in relative amounts of these components signal larval age to the workers, and each of these chemicals is used to signal worker bees to carry out specific functions for larval care.

Honeybees survive or perish as a group, requiring flawless communication. How could such an intricate system develop in stages by chance?

Bibliography:

1. Slessor, K.N., M.L. Winston, and Y. Le Conte. 2005. Pheromone communication in the honeybee (*Apis mellifera L.*). *J. Chem. Ecol.* 31:2731–2745.
2. Breed, M.D., E. Guzmán-Novoa, and G.J. Hunt. 2004. Defensive behavior of honey bees: organization, genetics, and comparisons with other bees. *Annual Rev. Entomol.* 49:271–298.